Background Materials for Formal Submittal
(Includes the BDAC Meeting Summary)

E-028388

CALFED Preferred Program Alternative
February 17, 2000

The CALFED agencies are developing a long-term comprehensive plan to restore ecological health and improve water management for beneficial uses of the Bay-Delta System. To achieve this goal, the CALFED Program seeks to restore ecological health, improve water quality, improve water supply reliability and ensure levee and channel integrity.

The CALFED agencies are currently completing a Programmatic Environmental Impact Statement and Report (EIS/EIR) pursuant to the National Environmental Policy Act (NEPA) and the California Environmental Quality Act (CEQA). That document examines alternatives for meeting the Program goals. The CALFED agencies have identified a Preferred Program Alternative as part of this environmental review. The programmatic EIS/EIR analyzes the environmental implications of each of the alternatives and compares them to the existing conditions and to the expected future conditions without any CALFED action.

The Preferred Program Alternative describes the policy direction and long-term plan the CALFED agencies propose to follow in this effort. A programmatic evaluation is useful in the present case because it allows the agencies to examine the overall impacts of individual, but geographically related, issues. It is also necessary to conduct the environmental review at a programmatic level because of the number of actions, length of time of implementation, and the complexity of the problems and solutions being considered.

PREFERRED PROGRAM ALTERNATIVE

The Preferred Program Alternative consists of a set of broadly described programmatic actions which set the long-term, overall direction of the CALFED Program. The description is programmatic in nature, intended to help agencies and the public make decisions on broad methods to meet Program purposes. The Preferred Program Alternative is made up of the Levee System Integrity Program, Water Quality Program, Ecosystem Restoration Program, Water Use Efficiency Program, Water Transfer Program, Watershed Program, Storage and Conveyance.

Even in this broad programmatic description, actions are intended to take place in an integrated framework and not independently of the other programs. While each Program element is described individually, it is understood that only through coordinated, linked, incremental investigation, analysis, and implementation can we effectively resolve problems in the Bay-Delta system.

LEVEE SYSTEM INTEGRITY PROGRAM

The focus of the Levee System Integrity Program is to improve levee stability to benefit all users of Delta water and land. Actions described in this Program element protect water supply reliability by maintaining levee and channel integrity. Levee actions will be designed to provide simultaneous improvement in habitat quality, which will indirectly improve water supply reliability. Levee actions also protect water quality, particularly during low-flow conditions when a catastrophic levee breach would draw salty water into the Delta.

There are five main parts to the levee program plus Suisun Marsh levee rehabilitation work:

- Delta Levee Base Level Protection Plan - Improve and maintain Delta levee system stability to meet the Corps' PL 84-99 levee standard.

- Delta Levee Special Improvement Projects - Enhance flood protection for key islands that provide state-wide benefits to the ecosystem, water supply, water quality, economics, infrastructure, etc.

- Delta Levee Subsidence Control Plan - Implement current best management practices (BMPs) to correct subsidence adjacent to levees and coordinate research to quantify the effects and extent of inner-island subsidence.

- Delta Levee Emergency Management and Response Plan - The emergency management and response plan will build on existing state, federal, and local agency emergency management programs.

- Delta Levee Risk Assessment - Perform a risk assessment to quantify the major risks to Delta resources from floods, seepage, subsidence and earthquakes; evaluate the consequences; and develop recommendations to manage the risk.

- Suisun Marsh Levees- Rehabilitate Suisun Marsh levees.

WATER QUALITY PROGRAM

The CALFED Program is committed to achieving continuous improvement in the quality of the waters of the Bay-Delta System with the goal of minimizing ecological, drinking water, and other water quality problems, and to maintaining this quality once achieved. Improvements in water quality will result in improved ecosystem health, with indirect improvements in water supply reliability. Improvements in water quality also increase the utility of water, making it suitable for more uses.

The Water Quality Program includes the following actions:

- Drinking water parameters - Reduce the loads and/or impacts of bromide, total organic carbon, pathogens, nutrients, salinity, and turbidity through a combination of measures that include source reduction, alternative sources of water, treatment, storage and if necessary, conveyance improvements such as a screened diversion structure (up to 4,000 cfs) on the Sacramento River near Hood. The Conveyance section of this document includes a discussion of this potential improvement.

- Pesticides - Reduce the impacts of pesticides through (1) development and implementation of BMP's, for both urban and agricultural uses; and (2) support of pesticide studies for regulatory agencies, while providing education and assistance in implementation of control strategies for the regulated pesticide users.

- Organochlorine pesticides - Reduce the load of organochlorine pesticides in the system by reducing runoff and erosion from agricultural lands through BMP's.

- Trace metals - Reduce the impacts of trace metals, such as copper, cadmium, and zinc, in upper watershed areas near abandoned mine sites. Reduce the impacts of copper through urban storm water programs and agricultural BMP's.

- Mercury - Reduce mercury levels in rivers and the estuary by source control at inactive and abandoned mine sites.

- Selenium - Reduce selenium impacts through reduction of loads at their sources and through appropriate land fallowing and land retirement programs.

- Salinity - Reduce salt sources in urban and industrial wastewater to protect drinking and agricultural water supplies, and facilitate development of successful water recycling, source water blending, and groundwater storage programs. Salinity in the Delta will be controlled both by limiting salt loadings from its tributaries, and through managing sea-water intrusion by such means as using storage capability to maintain Delta outflow and to adjust timing of outflow, and by export management.

- Turbidity and sedimentation - Reduce turbidity and sedimentation, which adversely affect several areas in the Bay-Delta and its tributaries.

- Low dissolved oxygen - Reduce the impairment of rivers and the estuary from substances that exert excessive demand on dissolved oxygen.

- Toxicity of unknown origin - Through research and monitoring, identify parameters of concern in the water and sediment, and implement actions to reduce their impacts to aquatic resources.

ECOSYSTEM RESTORATION PROGRAM

The goal of the Ecosystem Restoration Program is to improve and increase aquatic and terrestrial habitats and improve ecological functions in the Bay-Delta system to support sustainable populations of diverse and valuable plant and animal species. In addition, the Ecosystem Restoration Program, along with the water management strategy, is designed to achieve or contribute to the recovery of listed species found in the Bay-Delta and, thus, achieve goals in the Multi-Species Conservation Strategy. Improvements in ecosystem health will reduce the conflict between environmental water use and other beneficial uses, and allow more flexibility in water management decisions.

The Ecosystem Restoration Program identifies programmatic actions designed to restore, rehabilitate, or maintain important ecological processes, habitats, and species within 14 ecological management zones. Implementation of these programmatic actions will be guided by six goals presented in the Strategic Plan for Ecosystem Restoration. Nearly 100 restoration objectives have been developed which are directly linked to one of the six goals. Each objective further defines the restoration approach for each ecological process, habitat, species, or ecosystem stressor. One to several restoration targets have been developed for each objective to set more specific or quantified restoration levels.

Long-term implementation of the Ecosystem Restoration Program will be guided by the adaptive management approach described in the Strategic Plan for Ecosystem Restoration. This approach to

restoration will require review by an Ecosystem Restoration Science Review Panel and will rely on information developed in the Comprehensive Monitoring, Assessment, and Research Program.

Representative Ecosystem Restoration Program actions include:

- Protecting, restoring, and managing diverse habitat types representative of the Bay-Delta and its watershed.
- Acquiring water from sources throughout the Bay-Delta's watershed to provide flows and habitat conditions for fishery protection and recovery.
- Restoring critical in-stream and channel-forming flows in Bay-Delta tributaries.
- Improving Delta outflow during key periods.
- Reconnecting Bay-Delta tributaries with their floodplains through the construction of setback levees, the acquisition of flood easements, and the construction and management of flood bypasses for both habitat restoration and flood protection.
- Developing assessment, prevention, and control programs for invasive species.
- Restoring aspects of the sediment regime by relocating in-stream and floodplain gravel mining, and by artificially introducing gravels to compensate for sediment trapped by dams.
- Modifying or eliminating fish passage barriers, including the removal of dams, construction of fish ladders, and construction of fish screens that use the best available technology.
- Targeting research to provide information that is needed to define problems sufficiently, and to design and prioritize restoration actions.

WATER USE EFFICIENCY PROGRAM

The Water Use Efficiency Program includes actions to assure efficient use of existing and any new water supplies developed by the Program. Efficiency actions can alter the pattern of water diversions and reduce the magnitude of diversions, providing ecosystem benefits. Efficiency actions can also result in reduced discharge of effluent or drainage, improving water quality.

The Water Use Efficiency Program will build on the work of the existing Agricultural Water Management Council and California Urban Water Conservation Council Process, supporting and supplementing those processes through planning and technical assistance and through targets financial incentives (both loans and grants). The Water Use Efficiency Program has identified potential recovery of currently irrecoverable water losses of over 1.4 million acre-feet of water annually by 2020 as a result of CALFED actions. Before execution of the ROD, CALFED will identify measurable goals and objectives for its urban and agricultural water conservation program, water reclamation programs, and managed wetlands programs.

Water conservation-related actions include:

- Implement agricultural and urban conservation incentives programs to provide grant funding for water management projects that will provide multiple benefits which are cost-effective at the state-wide level, including improved water quality and reduced ecosystem impacts.

- Identify, in region-specific strategic plans for agricultural areas, measurable objectives to assure improvements in water management.

- Expand state and federal programs to provide increased levels of planning and technical assistance to local water suppliers.

- Work with the Agricultural Water Management Council (AWMC) to identify appropriate agricultural water conservation measures, set appropriate levels of effort, and certify or endorse water suppliers that are implementing locally cost-effective feasible measures.

- Work with the California Urban Water Conservation Council (CUWCC) to establish an urban water conservation certification process and set appropriate levels of effort in order to ensure that water suppliers are implementing cost-effective feasible measures.

- Help urban water suppliers comply with the Urban Water Management Planning Act.

- Identify and implement practices to improve water management for wildlife areas

- Gather better information on water use, identify opportunities to improve water use efficiency, and measure the effectiveness of conservation practices.

- Conduct directed studies and research to improve understanding of conservation actions.

Water recycling actions include:

- Help local and regional agencies comply with the water recycling provisions in the Urban Water Management Planning Act.

- Expand state and federal recycling programs to provide increased levels of planning, technical, and financing assistance (both loans and grants) and to develop new ways of providing assistance in the most effective manner.

- Provide regional planning assistance that can increase opportunities for the use of recycled water.

WATER TRANSFER PROGRAM

The Water Transfer Program proposes a framework of actions, policies, and processes that, collectively, will facilitate water transfers and the further development of a state-wide water transfer market. The framework also includes mechanisms to provide protection from third-party impacts. A transfers market can improve water availability for all users, including the environment. Transfers can

also help to match water demand with water sources of the appropriate quality, thus increasing the utility of water supplies.

The Water Transfer Program will include the following actions and recommendations:

- Establish a California Water Transfer Information Clearinghouse to provide a public informational role. The clearinghouse would (1) ensure that information regarding proposed transfers is publically disclosed and, (2) perform on-going research and data collection functions to improve the understanding of water transfers and their potential beneficial and adverse effects.

- Require water transfer proposals submitted to the Department of Water Resources, the U.S. Bureau of Reclamation, or the State Water Resources Control Board to include analysis of potential groundwater, socioeconomic, or cumulative impacts as warranted by individual transfers.

- Streamline the water transfer approval process currently used by the Department of Water Resources, the U.S. Bureau of Reclamation, or the State Water Resources Control Board. This would include clarifying and disclosing current approval procedures and underlying policies as well as improving the communication between transfer proponents, reviewing agencies, and other potentially affected parties.

- Refine quantification guidelines used by water transfer approving agencies when they are reviewing a proposed water transfer. This will include resolving issues between stakeholders and approving agencies regarding the application of current agency-based quantification criteria.

- Improve the accessibility of state and federal conveyance and storage facilities for the transport of approved water transfers.

- Clearly define carriage water requirements and resolve conflicts over reservoir refill criteria such that transfer proponents are acutely aware of the implications of these requirements.

- Identify appropriate assistance for groundwater protection programs through interaction with CALFED agencies, stakeholders, the legislature, and local agencies. This is intended to assist local agencies in the development and implementation of groundwater management programs that will protect groundwater basins in water transfer source areas.

- Establish accounting, tracking, and monitoring methods to aid in-stream flow transfers under California Water Code Section 1707.

WATERSHED PROGRAM

The Watershed Program provides assistance, financial and technical, to local watershed programs that benefit the Bay-Delta system. Watershed actions can improve reliability by shifting the timing of flows, increasing base flows, and reducing peak flows. This also helps to maintain levee

integrity during high-flow periods. Other watershed actions will improve water quality by reducing discharge of parameters of concern.

The Watershed Program includes the following elements:

- Support local watershed activities - Implement watershed restoration, maintenance, and conservation activities that support the goals and objectives of the Program, including improved river functions.

- Facilitate coordination and assistance - Facilitate and improve coordination and assistance between government agencies, other organizations, and local watershed groups.

- Develop watershed monitoring and assessment protocols - Facilitate monitoring efforts that are consistent with the CALFED's protocols and support watershed activities that ensure that adaptive management processes can be applied.

- Support education and outreach - Support resource conservation education at the local watershed level, and provide organizational and administrative support to watershed programs.

- Define watershed processes and relationships - Identify the watershed functions and processes that are relevant to the CALFED goals and objectives, and provide examples of watershed activities that could improve these functions and processes.

STORAGE

Groundwater and /or surface water storage can be used to improve water supply reliability, provide water for the environment at times when it is needed most, provide flows timed to maintain water quality, and protect levees through coordinated operation with existing flood control reservoirs. Decisions to construct groundwater and/or surface water storage will be predicated upon complying with all program linkages, including:

- An assessment of groundwater storage, surface storage, reoperation of power facilities, and a fish barrier assessment as part of the Integrated Storage Investigation.

- Demonstrated progress in meeting the Program's water use efficiency, water reclamation, and water transfer program targets under the Water Management Strategy.

- Implementation of groundwater monitoring and modeling programs.

- Compliance with all environmental review and permitting requirements.

Subject to the above conditions, new groundwater and/or surface water storage will be developed and constructed, together with aggressive implementation of water conservation, recycling, and a protective water transfer market, as appropriate to meet CALFED Program goals. During Stage 1, through the Water Management Strategy (including the Integrated Storage Investigation), CALFED will

evaluate and determine the appropriate mix of surface water and groundwater storage, identify acceptable projects and initiate permitting and construction if program linkages and conditions are satisfied.

The total volume of surface and groundwater storage being assessed for this alternative range up to 6.0 million acre feet, and facility locations being considered are located in the Sacramento and San Joaquin Valleys and in the Delta. A list of sites for further consideration is included in the Revised Phase II Report Appendix.

CONVEYANCE

The Preferred Program Alternative employs a through-Delta approach to conveyance. Modifications in Delta conveyance will result in improved water supply reliability, protection and improvement of Delta water quality, improvements in ecosystem health, and reduced risk of supply disruption due to catastrophic breaching of Delta levees. The proposed through-Delta conveyance facility actions include:

- Construction of a new screened intake at Clifton Court Forebay with protective screening criteria.
- Construction of either a new screened diversion at Tracy with protective screening criteria and/or an expansion of the new diversion at Clifton Court Forebay to meet the Tracy Pumping Plant export capacity.
- Implementation of the Joint Point of Diversion for the SWP and CVP, and construction of interties.
- Construction of an operable barrier at the head of Old River to improve conditions for salmon migrating up and down the San Joaquin River.
- **Implementation of actions to ensure availability of water of adequate quantity and quality to agricultural diverters within the south Delta, and to contribute to restoring ecological health of aquatic resources in the lower San Joaquin River and south Delta. Actions may include channel dredging, extension and screening of agricultural intakes, consolidation of agricultural intakes, operable barriers, levee setbacks and levee improvements (such as levee reinforcement or seepage control). Actions will be staged, with appropriate monitoring and testing to guide the implementation process.**
- Operational changes to the SWP operating rules to allow export pumping up to the current physical capacity of the SWP export facilities.
- **Study and evaluate a screened diversion structure on the Sacramento River at Hood with a range of diversion capacities up to 4,000 cfs as a measure to improve drinking water quality in the event that the Water Quality Program measures do not result in continuous improvements toward CALFED drinking water goals. The Hood diversion would likely include a fish screen, pumps, and a channel between the Sacramento and Mokelumne Rivers. The Hood diversion is a contingent action to be considered only after three separate assessments are satisfactorily completed:**

first, a thorough assessment of Delta Cross Channel operation strategies, and confirmation of continued concern over water quality impacts from Delta Cross Channel operations; second, a thorough evaluation of the technical viability of a Hood diversion facility; and third, satisfactory resolution of the fisheries concerns about a diversion facility. The results of these evaluations will be shared with the Delta Drinking Water Council or its successor and the expert panel evaluating fish impacts of Delta conveyance. If these evaluations demonstrate that a Hood diversion facility is necessary to address drinking water quality concerns and can be constructed without adversely affecting fish populations, it will be constructed as a part of the Preferred Program Alternative in Stage II.

- Construct new setback levees; dredge and/or improve existing levees along the channels of the lower Mokelumne River system from Interstate 5 downstream to the San Joaquin River.

The Preferred Program Alternative also includes a process for determining the conditions under which any additional conveyance facilities and/or other water management actions would be taken in the future. The process would include:

- An evaluation of how water suppliers can best provide a level of public health protection equivalent to Delta source water quality of 50 ppb bromide and 3 ppm TOC.

- An evaluation based on two independent expert panels' reports–one on CALFED's progress toward these measurable water quality goals and the second on CALFED's progress toward ecosystem restoration objectives, with particular emphasis on fisheries recovery.